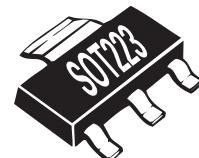


ZXM64N035G

35V N-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY

$V(BR)DSS = 35V$: $R_{DS(on)} = 0.050\Omega$: $I_D = 6.7A$

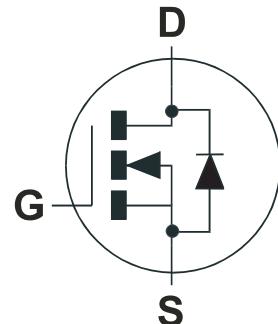


DESCRIPTION

This new generation of high cell density planar MOSFETs from Zetex utilises a unique structure that combines the benefits of low on-resistance with fast switching speed. This makes them ideal for high efficiency, low voltage, power management applications.

FEATURES

- Low on-resistance
- Fast switching speed
- Low threshold
- Low gate drive
- SOT223 package

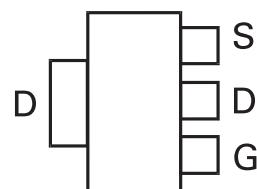


APPLICATIONS

- 50W Class D Audio Output Stage
- Motor Control

ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXM64N035GTA	7"	12mm	1000 units
ZXM64N035GTC	13"	12mm	4000 units



DEVICE MARKING

- ZXM6
- 4N035

Top View

ZXM64N035G

ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DSS}	35	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($V_{GS}=10V$; $T_A=25^\circ C$)(b) ($V_{GS}=10V$; $T_A=70^\circ C$)(b) ($V_{GS}=10V$; $T_A=25^\circ C$)(a)	I_D	6.7 5.4 4.8	A
Pulsed Drain Current (c)	I_{DM}	30	A
Continuous Source Current (Body Diode) (b)	I_S	2.4	A
Pulsed Source Current (Body Diode)(c)	I_{SM}	30	A
Power Dissipation at $T_A=25^\circ C$ (a) Linear Derating Factor	P_D	2.0 16	W mW/°C
Power Dissipation at $T_A=25^\circ C$ (b) Linear Derating Factor	P_D	3.9 31	W mW/°C
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +150	°C

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	62.5	°C/W
Junction to Ambient (b)	$R_{\theta JA}$	32	°C/W

NOTES

- (a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions
- (b) For a device surface mounted on FR4 PCB measured at $t \leq 10$ secs.
- (c) Repetitive rating 25mm x 25mm FR4 PCB, $D=0.05$ pulse width limited by maximum junction temperature.

ZXM64N035G

ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise stated).

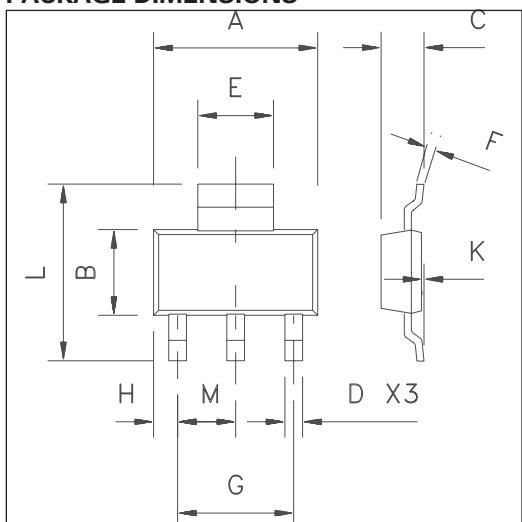
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
STATIC						
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	35			V	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}			1	μA	$V_{DS}=35\text{V}, V_{GS}=0\text{V}$
Gate-Body Leakage	I_{GSS}			100	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(\text{th})}$	1.0			V	$I_D=250\mu\text{A}, V_{DS}=V_{GS}$
Static Drain-Source On-State Resistance (1)	$R_{DS(\text{on})}$			0.050 0.062	Ω	$V_{GS}=10\text{V}, I_D=3.7\text{A}$ $V_{GS}=4.5\text{V}, I_D=1.9\text{A}$
Forward Transconductance (1)(3)	g_{fs}	4.3			S	$V_{DS}=10\text{V}, I_D=1.9\text{A}$
DYNAMIC (3)						
Input Capacitance	C_{iss}		950		pF	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $f=1\text{MHz}$
Output Capacitance	C_{oss}		200		pF	
Reverse Transfer Capacitance	C_{rss}		50		pF	
SWITCHING(2) (3)						
Turn-On Delay Time	$t_{d(\text{on})}$		4.2		ns	$V_{DD} = 15\text{V}, I_D = 3.7\text{A}$ $R_G = 6.0\Omega, V_{GS} = 10\text{V}$
Rise Time	t_r		4.6		ns	
Turn-Off Delay Time	$t_{d(\text{off})}$		20.5		ns	
Fall Time	t_f		8		ns	
Total Gate Charge	Q_g			27	nC	
Gate-Source Charge	Q_{gs}			5	nC	$V_{DS}=24\text{V}, V_{GS}=10\text{V},$ $I_D=3.7\text{A}$
Gate-Drain Charge	Q_{gd}			4.5	nC	
SOURCE-DRAIN DIODE						
Diode Forward Voltage (1)	V_{SD}			0.95	V	$T_J=25^\circ\text{C}, I_S=3.7\text{A},$ $V_{GS}=0\text{V}$
Reverse Recovery Time (3)	t_{rr}		24.5		ns	$T_J=25^\circ\text{C}, I_F=3.7\text{A},$ $di/dt = 100\text{A}/\mu\text{s}$
Reverse Recovery Charge (3)	Q_{rr}		19.1		nC	

NOTES

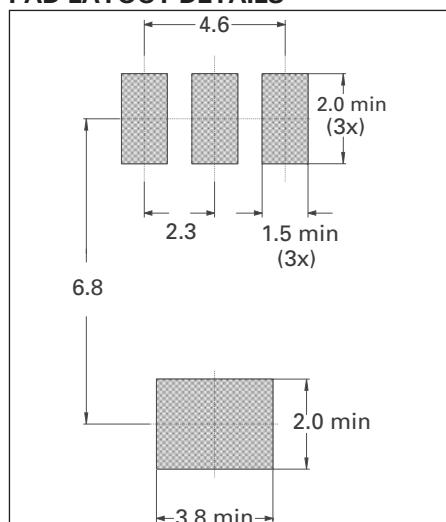
- (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.
- (2) Switching characteristics are independent of operating junction temperature.
- (3) For design aid only, not subject to production testing.

ZXM64N035G

PACKAGE DIMENSIONS



PAD LAYOUT DETAILS



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	6.3	6.7	0.248	0.264
B	3.3	3.7	0.130	0.146
C	-	1.7	-	0.067
D	0.6	0.8	0.024	0.031
E	2.9	3.1	0.114	0.122
F	0.24	0.32	0.009	0.13
G	NOM 4.6		NOM 0.181	
H	0.85	1.05	0.033	0.041
K	0.02	0.10	0.0008	0.004
L	6.7	7.3	0.264	0.287
M	NOM 2.3		NOM 0.0905	

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